



TRANSPORTATION ADVISORY COMMITTEE.

Arlington Planning Department, 730 Mass Ave,
Arlington MA, c/o Daniel Amstutz.

Date: May 12, 2021.
To: TAC
From: Chestnut St. Working Group.
Subject: Draft Recommended Chestnut St. Improvements.

Memorandum

1. Background

This memo presents draft recommendations for actions to be taken by the Town to improve pedestrian and bicycle safety on Chestnut St. between Mystic St. and Medford St. These are in response to a request from the Select Board dated May 20, 2021 for TAC to study traffic calming on Chestnut St, particularly at the crosswalk at Chestnut Terrace. The Select Board request was prompted by a pedestrian fatality at that crosswalk on December 31, 2019.

The TAC has discussed possible improvements at previous TAC meetings and conducted site visits to better understand existing conditions and potential actions to make improvements. TAC also received input from a public listening session conducted on March 30, 2020. In conjunction with the listening session, the Department of Planning and Community Development conducted a survey for which it received approximately 155 responses. The survey asked if respondents favored or did not favor various individual short-, medium- and long-term measures. Based on these various inputs, the working group identified the following safety issues for Chestnut Street:

- Vehicles turning right from Mystic St. northbound to Chestnut St. eastbound and vehicles turning right from Chestnut St. westbound to Mystic St. northbound can move at high speed through the large radius turn lanes (sometimes referred to as “slip” lanes).
- Queueing of westbound vehicles from Mystic Street through the Chestnut Terr. crosswalk.
- Neighborhood complaints of speeding on Chestnut St.
- Difficulty for pedestrians to cross Chestnut St. at the intersection with Mystic St. Because of the two separate slip lanes and center lanes, it can require up to three signal cycles for pedestrians to cross each roadway section during a designated pedestrian phase.
- Frequent bicycle traffic with no marked bicycle facilities.
- Broken sidewalk across Russell Common Parking Lot driveway
- Inadequate pedestrian accommodations across Medford St. at Chestnut St.

2. Existing Conditions

Chestnut Street is approximately 600 feet long between Mystic Street and Medford Street. It is bordered by dense residential developments (Mystic Tower Condominiums, Chestnut Manor), schools (Arlington Catholic High School, St. Agnes School), the Russell Common parking lot, and Mt. Pleasant Cemetery. The signalized intersection of Mystic St. and Chestnut St. includes

crosswalks, and there are unsignalized crosswalks at Chestnut Terr. and Medford St. Chestnut St. is also designated state numbered Route 60 and carries significant traffic volumes as a through route between the City of Medford and the Town of Belmont via Arlington Center.

Chestnut St. is marked for one wide travel lane in each direction and is approximately 50' wide between Chestnut Terr. and Medford St. The road widens at Mystic St. to accommodate right-turn lanes from and to Mystic St. northbound and two unmarked left-turn lanes from Chestnut St. westbound to Mystic St. southbound. Parking regulations include "No Parking Anytime – Saturdays and Sundays Excluded" on the south side between the Chestnut Terr. crosswalk and Medford St. The same regulations apply on the north side between the Chestnut Terr. crosswalk and 9 Chestnut St., a distance of approximately 135 feet. Between 9 Chestnut St. and Medford St., the north side is signed for 4-hour unmetered parking.

At the Chestnut St. crosswalk at Chestnut Terr., the double yellow centerline is not centered in the roadway. It is 19 feet from the south curb, allowing for a 17-foot driving lane and a two-foot shoulder; and is 31 feet from the north curb, allowing for a 27-foot driving lane and a four-foot shoulder. East of the Chestnut Terr. Crosswalk, the double yellow line curves back towards the middle of the road and is located in the center of the roadway at Medford St.

3. Recommendations

The following recommendations are based on addressing the issues identified for Chestnut St. and effectively using the full 50-foot pavement width between Chestnut Terr. and Medford St.

1. Repair the sidewalk across the Russell Common parking lot driveway on the south side of Chestnut St. and install detectable panels on both sides of the driveway. The existing sidewalk is in poor condition (broken concrete) and not ADA compliant.
2. Install advance crosswalk warning signs on both approaches to the crosswalks at Chestnut Terr. and Medford St. Advanced warning signs would help increase driver awareness of the crosswalks and are commonly used at other crosswalks in Arlington. This recommendation also includes moving the crosswalk sign on the south end of the Chestnut Terr. crosswalk from the east side of the crosswalk to the west side where the sign typically would be located.
3. Install "NO TURN ON RED" (NTOR) sign on the right turn lane from Chestnut St. westbound to Mystic St. northbound.
4. Install curb extensions on both ends of the Chestnut St. crosswalks at Chestnut Terr. and Medford St. The extensions will shorten the length of the crossings requiring less time needed for pedestrians to cross and be exposed to on-coming traffic. Temporary extensions should be implemented this year and, if successful in improving pedestrian safety without negatively impacting bicycle or vehicular operations, should be installed permanently when Chestnut St. is repaved (expected to be done in 2022).

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5. Install a five-foot wide center island (length to be determined) in the middle of the Chestnut Terr. and Medford St. crosswalks to provide pedestrian refuges in the middle of the roadway. A temporary island should be implemented this year and, if successful in improving pedestrian safety without negatively impacting bicycle or vehicular operations, should be installed permanently when Chestnut St. is repaved (expected to be done in 2022). With the recommended curb extensions and center island, there would be 15.5 feet of roadway width in each direction to accommodate vehicles and bicycles at the crosswalks.
6. Install a pedestrian-activated warning signal (such as a rectangular rapidly flashing beacon) or an automatic flashing warning signal at the Chestnut Terr. crosswalk. This would help focus drivers' attention on the crosswalk and pedestrians in it.
7. Restripe Chestnut St. to provide the following:
 - a. 11-foot travel lanes in each direction. In conjunction with the recommended improvements in b. through d. below, this would narrow the travel way, encouraging drivers to travel at lower speeds.
 - b. 7-foot parking lanes on the both sides of Chestnut Street with 4-hour parking permitted. A four-hour time limit is typical for on-street parking throughout Arlington Center, and was recommended for Chestnut St. in the (2014) Arlington Center Parking Study. Based on TAC crosswalk guidelines, parking should not be provided within 20 feet of the approach to the Medford Street crosswalk or within five feet following both the Medford St and Chestnut Terr. crosswalks.
 - c. 5-foot bicycle lanes on each side of Chestnut S.
 - d. 2-foot buffer lanes between the parking lane and bicycle lane on both sides of Chestnut St.
8. Initiate a capital improvement project to study the redesign of the Chestnut St. and Mystic St. intersection to eliminate the separate westbound and northbound right-turn "slip" lanes. This could allow for the replacement of the three existing crosswalks across Chestnut St. on the east side of Mystic St. with a single crosswalk. This, in turn, would provide a shorter crossing length and reduce the three separate pedestrian signal phases currently needed to cross with one signal phase. If the redesign proves feasible and desirable, the Town should proceed with the preparation of a functional design report and reconstruction of the intersection.
9. TAC and the Town Departments represented on TAC should study the intersection of Chestnut St. and Medford St. to determine if a reconfiguration of the intersection is warranted. This study should consider crash data, traffic volume and speeds, pedestrian and bicycle volumes, adjacent land uses, parking restrictions, and existing intersection geometry and traffic control.

The existing layout of the intersection of Chestnut St. and Medford St. does not accommodate a continuous sidewalk or crosswalk across Medford St. Any pedestrian traveling east along

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the south sidewalk of Chestnut St. must travel south on Medford St. approximately 115 feet to reach the crosswalk at Compton St. to cross Medford St. In addition, there is a merge area for Chestnut St. and Medford St, heading northbound. Medford St. travels straight through the merge area allowing drivers to easily miss the YEILD control on its approach to Chestnut St. The merge from Medford St. likely suffers from sight distance issues due to the acute merge angle Between Chestnut St. and Medford St.

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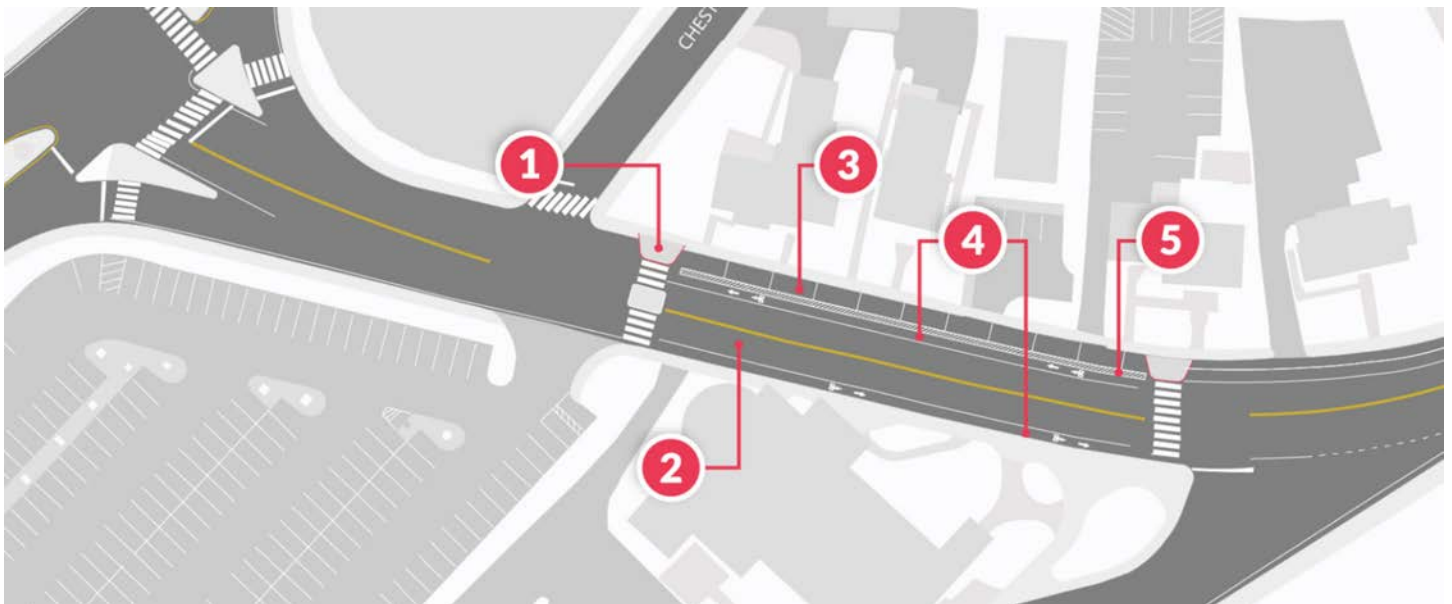
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Figure 1



Figure 2



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